

AMSAT News Service Weekly Bulletins

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SB SAT @ AMSAT \$ANS-289.01

STS-58 LAUNCH SET AGAIN

HR AMSAT NEWS SERVICE BULLETIN 289.01 FROM AMSAT HQ

SILVER SPRING, MD OCTOBER 16, 1993

TO ALL RADIO AMATEURS BT

BID: \$ANS-289.01

After Two Launch Attempts, STS-58 WILL TRY AGAIN 18-OCT-93!

The 3rd launch attempt of STS-58 is now scheduled for Monday, 18-OCT-93 at 14:53 UTC. The following are the preliminary keplerian elements to be used.

STS-58

1 00058U	93291.67747791	.00119475	00000-0	26040-3 0	77
2 00058	39.0114	128.6088	0007676	272.4217	87.5676 15.96123499 27

Satellite: STS-58

Catalog number: 00058

Epoch time: 93291.67747791 = (18-OCT-93 16:15:34.09 UTC)

Element set: 007

Inclination: 39.0114 deg

RA of node: 128.6088 deg

Space Shuttle Flight STS-58

Eccentricity: .0007676

Prelaunch Element set JSC-007

Arg of perigee: 272.4217 deg

Launch: 18-OCT-93 14:53 UTC

Mean anomaly: 87.5676 deg

Mean motion: 15.96123499 rev/day

Gil Carman (WA5NOM)

Decay rate: 1.19475e-03 rev/day~2

NASA Johnson Space Center

Epoch rev: 2

Checksum: 331

Space Shuttle Columbia's planned launch has been postponed until Monday, 18-OCT-93. The scheduled launch time begins at 10:53 EDT. One of 2 S-Band transponders used for air-to-ground communications failed during pre-flight checks on the second launch attempt 15-OCT-93. Engineers reported a solid state failure in the receiver unit. Also contributing to the delay was the lack of favorable weather conditions.

STS-58 Shuttle Amateur Radio Experiment (SAREX) Information Sheet:

Mission: STS-58 Space Shuttle Columbia
Spacelab Life Sciences-2 (SLS-2) Mission

Launch: October 18, 1993, 14:53 UTC

Orbit: 39 degrees orbital inclination

Mission Length: 13 days (Nominal)

Amateur Radio

Operators: Bill McArthur (KC5ACR), Marty Fettman (KC5AXA),
Rick Searfoss (KC5CKM)

Modes: FM Voice
Prime callsign KC5ACR

Packet Radio
Callsign W5RRR-1

Frequencies: All operations in split mode. Do not transmit on the downlink frequency of 145.550 MHz.

Voice Freqs: Downlink: 145.55 MHz (Worldwide)
Uplinks: 144.91, 144.93, 144.95, 144.97, 144.99 MHz
(Except Europe)
144.70, 144.75, 144.80 MHz (Europe only)

Note: The crew will not favor any specific uplink frequency, so your ability to work the crew will be the "luck of the draw."

Packet Freqs: Downlink: 145.55 MHz
Uplink: 144.49 MHz

Info: Goddard Amateur Radio Club, WA3NAN, Greenbelt Maryland,
SAREX Bulletins and Shuttle Retransmissions
3.860 MHz, 7.185 MHz, 14.295 MHz, 21.395 MHz, 28.650 MHz
and 147.450 MHz (FM)

Johnson Space Center ARC, W5RRR, Houston, Texas
SAREX Bulletins 7.225 MHz, 14.280 MHz, 21.395 MHz,
28.650 MHz, (SSB) and 146.64 MHz (FM)

ARRL Amateur Radio Station, W1AW, Newington, CT
SAREX News Bulletins
3.990, 7.290, 14.290, 18.160, 21.390, and 28.590 MHz
and 147.555 MHz (FM)

Also, bulletins available on internet, via AMSAT ANS,
Compuserve, and your local PBSS.

School Group Participation: 18 school groups will participate
in SAREX with pre-scheduled direct
and telebridge contacts. These include
17 in the U.S., and one France.

[The AMSAT News Service (ANS) would like to thank Frank Bauer (KA3HD0) for this bulletin item.]

/EX
SB SAT @ AMSAT \$ANS-289.02
A0-13 ECLIPSE SEASON APPROACHES

HR AMSAT NEWS SERVICE BULLETIN 289.02 FROM AMSAT HQ
SILVER SPRING, MD OCTOBER 16, 1993
TO ALL RADIO AMATEURS BT
BID: \$ANS-289.02

G3IOR Provides Information About Sun/Moon Eclipses For A0-13

During the course of the year as A0-13 makes its way around the Earth in its highly elliptical orbit, there will be a few Earth-Moon-Sun "geometries" which will cause A0-13 to experience either partial or complete darkness because of the Earth or the Moon obscuring A0-13's view of the Sun. For most "Low-Earth-Orbiting" (LEO) satellites, many OSCAR users are aware that they experience eclipses daily for varying periods during each orbit. But for A0-13, these eclipse periods come only during certain times in the year and not only are Ground Controllers aware of

these times, but every user of A0-13 should also be aware of the eclipse seasons. G3IOR predicts that the next lunar eclipse will occur on 13-NOV-93 beginning at 13:33 UTC and ending at 15:13 UTC. A0-13 will not experience total darkness during this lunar eclipse since the Moon will only obscure A0-13 from the Sun by 89% at its peak. The peak of this eclipse, or the maximum darkness, will occur at 14:16 UTC. For those A0-13 telemetry gathering enthusiasts, you can monitor the General Telemetry Beacon on a downlink frequency of 145.812 MHz or 2400.646 MHz. Only stations on the west coast of the U.S., Pacific, Australia, and Japan will have visibility to A0-13 during this lunar eclipse. Since most of this lunar eclipse will happen during a Mode-S transponder period, there will be no adjustment made to the transponder schedule. G3IOR says that this is because Mode-S draws very little power during its operation. Using any recent set of keplerian elements in InstantTrak V1.00b, it appears that at 13:33 UTC the Mean Anomaly (MA) count for A0-13 will be 171; at the peak of the lunar eclipse (89% obscuration) at 14:16 UTC the A0-13 will be at MA 187. The end of the eclipse will be around MA 209 at 15:13 UTC on 13-NOV-93. This puts the start of the lunar eclipse in Mode-BS, then the rest of the eclipse period either with the Mode-S transponder in operation or Mode-S beacon only operation. Those wishing to collect telemetry should be prepared to move to Mode-S during this period. Please take note of the following A0-13 transponder operating schedule which covers the lunar eclipse period:

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M QST *** A0-13 TRANSPONDER SCHEDULE *** 1993 Oct 25-Nov 15
Mode-B : MA 0 to MA 130 !
Mode-BS : MA 130 to MA 180 !
Mode-S : MA 180 to MA 205 !<- S transponder; B trsp. is OFF
Mode-S : MA 205 to MA 210 !<- S beacon only
Mode-BS : MA 210 to MA 226 ! Blon/Blat 210/0
Omnis : MA 240 to MA 80 ! Move to attitude 240/0, Nov 15
Please don't uplink to Mode-B between MA 180-205 as this interferes with
Mode-S transponder operations.
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As far as situation where the Earth blocks the Sun from A0-13, these solar eclipses will begin on 07-DEC-93 and continue until 24-DEC-93. Because the length of eclipse periods can be quite long, a special transponder schedule will be implemented during this time period. The following schedule is designed to take these solar eclipse periods into account.

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L QST *** A0-13 TRANSPONDER SCHEDULE *** 1993 Nov 15-Jan 31
Mode-B : MA 0 to MA 95 ! / Eclipses, max
Mode-B : MA 95 to MA 180 ! OFF Dec 07 - 24. < duration 136
Mode-B : MA 180 to MA 220 ! \ minutes.
Mode-S : MA 220 to MA 230 !<- S transponder; B trsp. is OFF
Mode-BS : MA 230 to MA 226 ! Blon/Blat 240/0
Omnis : MA 250 to MA 150 ! Move to attitude 180/0, Jan 31
Please don't uplink to Mode-B between MA 220-230 as this interferes with
Mode-S transponder operations.
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G3IOR encourages those who wish to monitor a particular telemetry parameter during these solar eclipse periods, should let him know since he will make sure that parameter is part of the Whole Orbit Data (WOD) collection facility.

[The AMSAT News Service (ANS) would like to thank James Miller (G3IOR) for the information which went into this bulletin item.]

/EX
SB SAT @ AMSAT \$ANS-289.03
AMSAT OPS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 289.03 FROM AMSAT HQ
SILVER SPRING, MD OCTOBER 16, 1993

TO ALL RADIO AMATEURS BT
 BID: \$ANS-289.03

Current AMSAT Operations Net Schedule For AO-13

AMSAT Operations Nets are planned for the following times. Mode-B Nets are conducted on AO-13 on a downlink frequency of 145.950 MHz. If, at the start of the OPS Net, the frequency of 145.950 MHz is being used for a QSO, OPS Net enthusiasts are asked to move to the alternate frequency of 145.955 MHz.

Date	UTC	Mode	Phs	NCS	Alt NCS
23-Oct-93	1315	B	154	WB6LLO	WA5ZIB
30-Oct-93	1300	B	62	W5IU	WB6LLO
13-Nov-93	1230	B	146	VE2LVC	W5IU

Any stations with information on current events would be most welcomed. Also, those interested in discussing technical issues or who have questions about any particular aspect of OSCAR statellite operations, are encouraged to join the OPS Nets. In the unlikely event that either the Net Control Station (NCS) or the alternate do not call on frequency, any participant is invited to act as the NCS.

Slow Scan Television on AO-13

SSTV sessions will be held on immediately after the OPS Nets a downlink on a Mode-B downlink frequency 145.960 MHz.

/EX
 SB SAT @ AMSAT \$ANS-289.04
 WEEKLY OSCAR STATUS REPORTS

HR AMSAT NEWS SERVICE BULLETIN 289.04 FROM AMSAT HQ
 SILVER SPRING, MD OCTOBER 16, 1993
 TO ALL RADIO AMATEURS BT
 BID: \$ANS-289.04

Weekly OSCAR Status Reports: 16-OCT-93

A0-13: Current Transponder Operating Schedule:
 L QST *** A0-13 TRANSPONDER SCHEDULE *** 1993 Aug 25-Oct 25
 Mode-B : MA 0 to MA 90 !
 Mode-BS : MA 90 to MA 120 !
 Mode-S : MA 120 to MA 145 !<- S transponder; B trsp. is OFF
 Mode-S : MA 145 to MA 150 !<- S beacon only
 Mode-BS : MA 150 to MA 180 ! Blon/Blat 180/0
 Mode-B : MA 180 to MA 256 !
 Omnis : MA 230 to MA 40 ! Move to attitude 210/0, Oct 25

M QST *** A0-13 TRANSPONDER SCHEDULE *** 1993 Oct 25-Nov 15
 Mode-B : MA 0 to MA 130 !
 Mode-BS : MA 130 to MA 180 !
 Mode-S : MA 180 to MA 205 !<- S transponder; B trsp. is OFF
 Mode-S : MA 205 to MA 210 !<- S beacon only
 Mode-BS : MA 210 to MA 226 ! Blon/Blat 210/0
 Omnis : MA 240 to MA 80 ! Move to attitude 240/0, Nov 15
 Please don't uplink to Mode-B between MA 180-205 as this interferes with Mode-S transponder operations. Reorientation from Attitude 180/0 to 210/0: A magnetorque will be initiated on Orbit #4105 MA 224 [Oct 24 @ 03:48 UTC] and will be executed over 4 perigees, completing on Orbit #4109 MA 32 [Oct 25 @ 17:00 UTC]. The new schedule, as per M-block, will be invoked Orbit

#4109 MA 140, and thus that orbit (only) will contain two Mode-S sessions. Continuous up-to-date information about A0-13 operations is always available on the beacons at 145.812 MHz and 2400.646 MHz in CW, RTTY and 400 bps PSK. Also, these bulletins are also posted to INTERNET, ANS bulletins, Packet, PACSATs, etc., and can also be found in many international news-letters. [G3RUH/DB20S/VK5AGR]

A0-16: Operating normally. [WH6I]

U0-22: Operating normally. [WH6I]

K0-23: Up and running. Busy as usual. The images are no longer available. [WH6I]

K0-25: Has been in "TICK" mode lately. [WH6I]

RS-12: W9CGI reports that he had his first satellite contact through RS-12 a couple of weeks ago on Mode-K, i.e., 15M uplink and 10M downlink. He reports that he made about 4 contacts altogether, on two different passes. W9CGI would appreciate any ideas/filter or thoughts, etc. from any other RS-12 users on how to keep the 15M uplink out of his 10M receiver so that he can run duplex like any other mode bird. He uses a Yaesu FT990 at about 10W on 15M uplink to a Cushcraft R5 vertical. For the downlink he has a vertical J-pole about 60 ft from the R5 antenna and then inside he uses a HF converter in the FT726 transceiver. The FT726 is of course his normal Mode-B rig. W9CGI says that he is finally finding time to get back on the birds so he is looking forward to making many contacts.
[W9CGI @ N5AAA.IN.USA]

The AMSAT NEWS Service (ANS) is looking for volunteers to contribute weekly OSCAR status reports. If you have a favorite OSCAR which you work on a regular basis and would like to contribute to this bulletin, please send your observations to WD0HHU at his CompuServe address of 70524,2272, on INTERNET at wd0hhu@amsat.org, or to his local packet BBS in the Denver, CO area, WD0HHU @ W0LJF.#NECO.CO.USA.NOAM. Also, if you find that the current set of orbital elements are not generating the correct AOS/LOS times at your QTH, PLEASE INCLUDE THAT INFORMATION AS WELL. The information you provide will be of value to all OSCAR enthusiasts.

/EX